DETAILED ACTION

The restriction below is present for the purpose of clarifying previous restriction requirements. The Examiner is processing the Office Action with the Group I which was elected in response filed 4-7-05.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 54, 56-58, 60-63, 70-72, 75, 76, 78-80, 82-85, 92-94 drawn to ink/head composition, classified in class 106, subclass 31.27.

II. Claims 64-67, 87-89, drawn to recording method, classified in class 427, subclass 466+.

III. Claims 68-69, 90-91, 95-96, drawn to record image, classified in class, subclass.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the product as claimed can be used in a materially different process as such stamp pad and screen printing.

Inventions I and III are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product, and the species are

patentably distinct (MPEP § 806.05(j)). In the instant case, the intermediate product is deemed to be useful as an enamel composition and the inventions are deemed patentably distinct because there is nothing of record to show them to be obvious variants.

Inventions III and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process as such stamping and screen printing.

Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and examination burden if restriction were not required because one or more of the following reasons apply:

(a) the inventions have acquired a separate status in the art in view of their different classification;

(b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;

(c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);

(d) the prior art applicable to one invention would not likely be applicable to another invention;

(e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected invention**.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected invention.

If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable

over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Applicant's election with traverse of Group I in the reply filed on 4-7-05 is acknowledged. The traversal is on the ground(s) that the search of all the subject matter is not undue burden for Examiner. This is not found persuasive because the invention of Groups II and III do not require all the limitation of Group I.

The requirement is still deemed proper and is therefore made FINAL.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 70 and 92 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of U.S. Patent No. 7,264,664. Although the conflicting claims are not identical, they are not patentably distinct from each other because both ink set comprise an ink composition disclose dynamic surface tension and static surface tension wherein the difference between the two surface tension overlap (i.e in 10/665,088 the difference is represented by $0 \leq$ [dynamic surface tension (mN/m)] – [static surface tension (mN/m)] ≤ 7 (mN/m) and in 10/713,226 the difference is 0 mN/m $\leq$ dl $\leq$ 15 mN/m wherein dl is difference between dynamic surface tension and static surface tension) wherein the bubble frequency in the same range.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 60, 61, 63, 70, 82, 83, 85, 92 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In the claims 54, 75 from which the above claims depend; Applicant states that the coloring agent is a dye. It is unclear whether applicant meant for the dependent claims have a pigment in addition to the dye set forth in the independent claims of 54 and 75. Please clarify.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 54, 56-58, 62, 71-72, 75-76, 78-80, 84, 93-94 are rejected under 35 U.S.C. 102(b) as being anticipated by Lauw (US Patent 5,534,051).

Lauw teaches a specific dye set used for thermal ink jet printing comprising Direct Blue 199 and Acid Blue 9, Reactive Red 180 and Acid Red 52 and Acid Yellow 23 (abstract and col. 2 line 37-col. 3 line 6). The cyan, magenta, and yellow ink composition comprises 0.1 to 4 percent by weight of at least one dye, about 3 to 20 percent by weight of at least one diol, 0 to 5 percent by weight of at least one glycol ether, about 3 to 9 percent by weight of 2-pyrrolidone, about 0.5 to 5 percent by weight of at least one component selected from the group consisting of surfactants, buffers and biocides, about 3 to 11 percent by weight of at least one inorganic salt and the balance water (col. 3 lines 53-61). The reference further teaches that the surfactant may be an alcohol ethoxylates nonionic surfactants such as Tergitol 15-S-15 (col. 5 lines 2-43), Tergitol 15-S series surfactants available from Union Carbide. Examples of surfactants include those of the general formula $C_{11\text{-}15}\ H_{23\text{-}31}\ OCH_2\ CH_2\ O!_x\ H$, which appears to be encompassed by the surfactants set forth on page 59-60 of the specification. The reference remains silent to the difference of the surface tensions. However, the composition of the reference is identical to the claimed composition and identical

composition must have the same properties. See MPEP 2112.01 I. The composition as taught by Lauw appears to anticipate the claimed invention.

Claims 54, 56-58, 62, 71-72, 75-76, 78-80, 84, 93-94 are rejected under 35 U.S.C. 102(e) as being anticipated by Koga et al (US Patent 7,014,695)

Koga et al teach a water based ink comprising a surfactant of formula (1) or (2), dipropylene glycol, a coloring agent and water (abstract, col. 3 lines 1-16). The reference further teaches that either surfactant is present in the amount of 0.1 to 3 percent by weight (col. 5 lines 1-12). The coloring agent may be a water-soluble dyes and pigments and combinations thereof and present in the amount of 0.1 to 20 percent by weight (col. 5 line 37-col. 6 line 23). The water is present in the amount of 10 to 98 percent by weight (col. 6 lines 28-34). The reference remains silent to the difference of the surface tensions. However, the composition of the reference is identical to the claimed composition and identical composition must have the same properties (surfactant of formula (2) appears to be encompassed by the surfactants set forth on pages 59-60 of the specification) See MPEP 2112.01 I. The reference discloses in the examples that the ink composition has been printed using a multi-head of the on-demand type wherein the droplets are applied by thermal energy and a piezoelectric element (col. 11 lines 28-39). The composition as taught by Koga et al appears to anticipate the claimed invention.

Claims 54, 56-58, 62, 71-72, 75-76, 78-80, 84, 93-94 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagashima et al (US Patent 6,676,734)

Nagashima et al teach an ink composition comprising organic compounds which are incompatible with each other, at least one compound exhibiting fluorescence properties and a coloring material exhibiting fluorescence properties and a liquid medium (abstract). The reference further teaches that a nonionic surfactant present in the amount of 1 to 20 percent by weight and may have the formula (I) (col. 9 lines 39-67) which appears to be encompassed by the structures set forth on pages 59-60 of the specification. The reference further teaches that the liquid medium comprises water and a water-soluble organic solvent such as polyalkylene glycol, ethers of polyhydric alcohols and cyclic amide. The composition may also comprise a water-holding agent that may be an urea and urea derivatives (col. 15 line 17-col. 16 line 10). The composition may also include a non fluorescence coloring material that is used to adjust the color tone (col. 16 line 48-66). The ink composition has a surface tension of at the most 40 mN/m at 25˚C (col. 26 line12-23). The reference also teaches that the ink composition may be applied by an apparatus in which an ink is within the recording head and the apparatus also ink container and that the system as taught by may be applied to any of the so-called on-demand type and continuous type (col. 27 line 29-col. 34 line 43). The reference remains silent to the difference of the surface tensions. However, the composition of the reference is identical to the claimed composition and identical composition must have the same properties (surfactant of formula (I) appears to be encompassed by the surfactants set forth on pages 59-60 of the specification) See MPEP 2112.01 I. The composition as taught by Nagashima et al appears to anticipate the claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

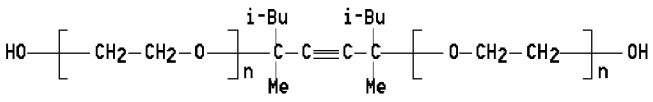
This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 60, 61, 82, 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagashima et al (US Patent 6,676,734) in view of Yatake (US Patent 5,746,818).

Nagashima et al is described above but fails to teach pigments.

Yatake teaches an ink composition comprising a pigment dispersible and/or soluble in water without the aid of any dispersant and a glycol ether selected from the group consisting of diethylene glycol mono-n-butyl ether, triethylene glycol mono-n-butyl ether, propylene glycol mono-n-butyl ether and dipropylene glycol mono-n-butyl ether (abstract and col. 2 lines 28-35). The reference also teaches a recording apparatus comprising a recording head is provided independently of an ink tank and an ink

composition (col. 2 lines 48-50). The reference teaches that the glycol ether can effectively inhibit the bleeding or feathering, realizing a high-quality image (col. 2 lines 12-14). The pigment may be subjected to surface treatment to bond at least one function group selected from carbonyl, carboxyl, hydroxyl and sulfonyl groups or a salt thereof, wherein the pigment may be carbon black (col. 3 lines 22-32) and present in the amount of 2 to 15 percent by weight (col. 3 lines 60-61). The glycol ether may be present in the amount of 3 to 30 percent by weight (col. 4 lines 16-19). The reference further teaches components such as 1,5-pentane diol and surfactants are added to improve the solubility of the ink composition (col. 4 lines 20-35). The ink contains acetylene glycol surfactant including Surfynol 104, 82, 465, 485 and TG are present in the ink composition in the amount of 0.5 to 1.5 percent by weight (col. 4 lines 28-37), wherein the Surfynol 465 as the formula below which appears to be a preferred surfactant set forth in Applicant specification page 59:



Therefore it would have been obvious to one of ordinary skill in the art to add the pigments as taught by Yatake in the similar ink composition of Nagashima et al as Nagashima teaches that a non fluorescence coloring material that is used to adjust the color tone.

Claims 60, 61, 82, 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagashima et al (US Patent 6,676,734) in view of Hayashi (US Patent 6,500,248).

Hayashi teaches an ink composition comprising a pigment, a 1,2-alkanediol, glycerin, a polyhydric alcohol derivative and/or an acetylene glycol surfactant, a water-soluble organic solvent, and water. The reference further teaches that the ink composition has a surface tension of not more than 40 mNm-1 at 20°C wherein the ink can provide good print quality and can realize continuous printing (abstract and col. 2 lines 47-60). The colorant may be a inorganic or organic pigment without particular limitations. The pigment may be subjected to surface treatment to attach at least one function group selected from carbonyl, carboxyl, hydroxyl and sulfonyl groups or a salt thereof (col. 4 lines 19-43). The pigment may be added to the ink composition in the amount of 0.5 to 15 percent by weight (col. 5 lines 7-9). The polyhydric alcohol may include diethylene glycol mono-n-butyl ether, triethylene glycol mono-n-butyl ether, propylene glycol mono-n-butyl ether and dipropylene glycol mono-n-butyl ether, which may be used alone or in combination in the amount of 3 to 30 percent by weight (col. 5 lines 19-33). The acetylene glycol surfactant is added in the amount of about 0.1 to 3 percent by weight (col. 5 line 42-6 line 10) (wherein the general formula has the formula set forth by Applicant of page 59). The ink composition comprises a water-soluble organic solvent and water as the main solvent. The water-soluble organic solvent may be ethylene glycol, diethylene glycol, triethylene glycol, dipropylene glycol, and 1,5-pentanediol are present in the amount 1 to 30 percent by weight (col. 6 lines 25-45). The reference further teaches that an ink composition containing a pigment wherein the ink is delivered from the front face of the nozzle can stir the ink permitting the ink to be

stably ejected. This can be achieved by pressurizing the ink, by means of pressurizing means for ejecting the ink (col. 10 line 66-col. 11 line 7).

Therefore it would have been obvious to one of ordinary skill in the art to add the pigments as taught by Hayashi in the similar ink composition of Nagashima et al as Nagashima teaches that a non fluorescence coloring material that is used to adjust the color tone.

Claims 63 and 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagashima et al (US Patent 6,676,734) in view of Kato (US Patent 6,440,203) in further view of JP 41-52925 and Uemura et al (2001/0029870).

Nagashima et al is described above, but fails to teach the specific combination of pigments set forth in claims 63 and 85.

Kato teaches an ink composition comprising a first colorant, a second colorant, a penetrating agent, water and a water-soluble organic solvent. The first colorant is a pigment which is dispersible and/or dissolvable in water without any dispersant (abstract and col. 2 lines 32-45). The reference also teaches that any pigment can be used (col. 2 lines 64-65). Pigments such as carbon black, Pigment Yellow 74, 138, 150 and 180, Pigment Red 122 and 202, Pigment Blue 15:3 and 15:4 may be present in the ink composition in the amount of 0.1 to 10 percent by weight (col. 3 lines 31-56). The penetrating agent include glycol ether and/or acetylene glycol surfactants (which general has the formula set forth by Applicant of page 59), wherein the glycol ether is present in the amount of 1 to 20 percent by weight and the acetylene glycol is present in the amount of 0.1 to 2 percent by weight (col. 7 line 51-col. 8 line 44). The ink

composition has a surface tension of about 25 to 50 mN/m (col. 8 lines 45-47). The aqueous solvent comprises water and a water-soluble organic solvent (col. 8 lines 52-53). The ink may further comprise a wetting agent including ethylene glycol, diethylene glycol, and alkyl ether of polyhydric alcohols present in the amount of 1 to 40 percent by weight (col. 9 lines 4-25). The reference also teaches that an ink set comprising a black, cyan, magenta and yellow inks (col. 10 lines 51+).

JP 41-52925 teaches a recording ink using a pigment composed of at least three colors including Pigment Blue 15:4 or the like phthalocyanine pigment as a cyan pigment, Pigment Red 122 or the like quinacridone as a magenta pigment and Pigment Yellow 151 or the like benzimidazolone as a yellow pigment (English Abstract); wherein the ink may be used in an ink jet recording method.

Uemura et al teaches benzimidazolone pigments including Pigment Yellow 120, 151, 154, 156, 175, 180, 181 and 194.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have replaced Pigment Yellow 151 with Pigment Yellow 180 because the substitution of art recognized equivalents as shown by Uemura et al would have been within the level of ordinary skill in the art.

Therefore it would have been obvious to use the pigment combination taught by JP 41-52925 in view of Uemura et al, because Kato teaches the use of pigments taught by JP 41-52925.

Response to Arguments

Applicant's arguments with respect to claims 54, 56-58, 60-63, 70-72, 75-80, 82-85,92-94 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VERONICA FAISON GEE whose telephone number is (571)272-1366. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Supervisory Patent Examiner, Art Unit 1793

/V. F. G./

Examiner, Art Unit 1793